

**2. THEME- ENVIRONMENT AND DEVELOPMENT – LESSONS FROM THE HILLS**

<b>Answer th following .</b>		<b>Each question carries 1 mark</b>
1	Give the reason for the enhancement of quality of man's living	
A	Enhancement of quality of living in man's life is due to his ability and power to transform his environment through technological developments	
2	What was the highest rainfall that was recorded in Uttarakhand till 2012.What was the rainfall recorded on 16 <sup>th</sup> and 17 <sup>th</sup> June 2013 within a period of 24 hours	
A	The highest rainfall recorded till 2012 was 350.5mm in 1970.The rainfall recorded on 16 <sup>th</sup> and 17 <sup>th</sup> within a span of 24 hours was 370 mm.	
3	What is the average monthly rainfall during the months of June , July and August	
A	In the month of June average monthly rainfall is 210mm while in July and August it is more than 600mm.	
4	What is the highest ever single day rainfall in June for the state of Uttarakhand	
A	It is 370mm.	
5	Name a disaster caused by natural reasons?	
A	Tsunami , Earth quake etc.	
6	Name a disaster caused by manmade reasons?	
A	Bomb blast, Terrorism	
7	Name a device used for collecting and measuring the amount of rain which falls.	
A	Rain gauge	
8	What do you mean by eco-friendly tourism?	
A	Tourism without upsetting the existing balance in nature at a place is called eco – friendly tourism.	
9	Who is an Ecologist?	
A	A biologist who studies the relation between organisms and their environment is an ecologist.	
10	What is meant by Disaster Management ?	
A	‘Disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. <sup>1,2</sup>	
12	What is the place of Uttarakhand on the Tourism map among all states.	
A	Uttarakhand ranks eighth on the Tourism Map.	
13	What is meant by cloudburst?	

A	The <b>cloudburst</b> is a localized weather phenomena representing highly concentrated rainfall over a small area lasting for few hours.
14	What is meant by landslide?
A	A large mass of rocks and earth that suddenly and quickly moves down the side of a mountain or hill
15	To what percentage the tourists are increased from 2001 to 2012 in KEDARNATH
A	378%
18	Name the place in Uttarakhand where you can find more number of Hydel power Projects
A	PITHORAGARH where 62 number of hydel projects are constructed.
19	What is meant by Quarrying?
A	The extraction of building stone or slate or rock from the ground
20	What is the unit of rainfall?
	mm ie millimeters of rain because the rainwater is collected in a container kept in an open place for 24 hours and the height of the rainwater is noted in mm
21	How is the record of rainfall maintained?
	The record of rainfall is maintained on a daily basis by the meteorological department in the place. Generally the rainfall received over a year is reported to-- classify the place as one which receives torrential rains or average or scanty rainfall.
22	When is a place said to have torrential rains?
	A place which receives above 3000mm of rain per year is said to have torrential rains. Eg Cherapunji, western coast of India—particularly Karnataka and Kerala
23	Do landslides occur in all hills?
	The Mountains of the Himalayas and the Western Ghats are young mountains and hence the soil has not hardened enough. Hence the chances of occurrence of landslides are more.
24	Why do landslides occur?
	One of the reasons could be--The anthropogenic activities (Man Made activities) like cutting the hills to make roads and houses have lead to keeping the cut edges of the hill without support. Hence the landslide when there is a heavy rain. Such landslides can be reduced by constructing a retaining wall along the walls of the roads etc.

	Secondly deforestations also
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Answer the following . Each question carries 2 mark	
1	Give the factors which increased the amount of disaster in Uttarakhand
A	<p>The factors which increased the affect of Uttarakhand disaster are</p> <ol style="list-style-type: none"> <li>Huge expansion of hydro-power projects to meet the growing demands of the expanding state</li> <li>Construction of roads to cope with the lakhs of tourists Poor disaster management</li> </ol>
2	Give the name of the forces which helped in the rescue operations of Uttarakhand disaster (or) Give the details of Human help provided in the rescue operations of the Uttarakhand disaster.
A	The Army, Air Force, Navy, Indo-Tibetan Border Police(ITBP), Border Security Force(BSF), National Disaster Response Force(NDRF), Public Works Department and local administration worked together for quick rescue operations. Several thousand soldiers were deployed for the rescue missions. Acivists of political and social organizations were also involved in the rescue and management of relief centres.
3	How many numbers of Hydel Power Projects were constructed in Uttarakhand? How much area of forests have been cleared.
A	244 Hydel Projects were constructed and an area of 15,072 ha of forests have been cleared.
4	List the human activities that cause disaster such as land slide.
A	<ol style="list-style-type: none"> <li>Cutting down of forests</li> <li>Building roads for promoting tourism,</li> <li>Unplanned structures</li> <li>Setting up industries and</li> </ol> <p>Erroneous agricultural practices o barren hill slopes</p>
5	A report commissioned by theUnion Environment and Forests Ministry in May 2012 had warned the centre against going ahead with 24 hydropower projects planned on the Alaknanda and Bhagirathi river systems in Uttarakand.Why?
	<p>: Because It stated that</p> <ol style="list-style-type: none"> <li>The projects would destroy 22 percent of the state's forestland</li> <li>Affect the unique Himalayan ecology along one-third of lengths of the two main tributaries of Ganga.</li> </ol>
6	16. Uttarakhand is one of the most fragile regions suffering from poor soil stability. What is the meaning of poor soil stability?

	<p>i. The soil is not hard enough to support the structures that are being built on it.</p> <p>ii. The soil is so loose that it can get washed away with water unlike the rocky mountains of the Aravali Mountain range.</p>
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7	<p>17. What facilities were lacking in this area?</p> <p>iii.</p>
	<p>a. There were no warning systems in place,</p> <p>b. no weathering monitoring systems near the major pilgrimage centres which saw a large number of tourists year after year.</p> <p>There do not seem to be any rain-gauges at Kedarnath and Badrinath and hence one may never know how much rainfall fell at those sites and we will</p>
8	<p>List a few of the damages caused by the natural calamity in Utterakhund :</p>
	<p>The floods washed away entire villages and small towns and destroyed entire roads, cutting off large areas, as well as homes, hotels and pilgrimage sites. Much of the infrastructure in the affected areas—roads, bridges, dams and civic facilities — have been completely destroyed or damaged.</p>
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Answer th following . Each question carries 3 mark	
1	What are the reasons for the irreversible damage that took place during the Uttarakhand disaster that took place on 16 <sup>th</sup> and 17 <sup>th</sup> June, 2013?
A	<p>Causes for the damage that took place during the disaster are due to</p> <p>a. Cloudburst and landslides</p>

	b. Cutting down of forests c. Building roads for promoting tourism, d. Unplanned structures e. Setting up industries and f. Erroneous agricultural practices on barren hill slopes g. Unscientific road building h. Constructing hydroelectric power plants
2	A large number of Hydel projects are constructed in the state of Uttarakhand. Why?
A	The principle of Hydel project is that Potential energy of water falling from a height can be utilized to produce electric energy. The Uttarakhand region's key resource is the water that flows from high glaciers and mountains to the plains. This resource was utilized to build hydropower projects that generate revenue mountains to the plains for the state.
3	What causes landslide in Uttarakhand?
A	Many factors contribute to the instability of slopes, but the main controlling factors are the nature of the underlying bedrock and soil, the configuration of the slope, the geometry of the slope, and ground-water conditions. <ul style="list-style-type: none"> <li>• Improper cutting of a slope by stream erosion, wave action, glaciers, or human activities such as road building,</li> <li>• Continuous and Heavy rainfall, rapid snowmelt, fluctuations in ground-water levels,</li> <li>• Shocks or vibrations caused by earthquakes or construction activities,</li> <li>• Movement of heavy loads on upper slopes, or</li> </ul> One of these or a combination of these factors is a cause for the landslides in Uttarakhand.
4	Fill in the blanks
	a. A tributary of Ganga b. An instrument used to measure the rain fall _____ c. Number of villages affected in Tehri is _____ d. One of the causes of disaster in Uttarakhand is _____ e. Uttarakhand ranks _____ among all states on the Tourism map

Answer the following .

Each question carries 5 mark

1	<p>When the flood struck in Uttarakhand about 28 million tourists were visiting the state, while the local people are close to that number.</p> <ol style="list-style-type: none"> <li>Does it really affect the ecological conditions of that region? If yes how?</li> <li>Do you think will it be a wise decision to ban tourism to this state?</li> </ol> <p>Justify your answer.</p>
A	<ol style="list-style-type: none"> <li> <p>Yes, by cutting down the forest and dynamiting the mountains for building roads and hotels for promoting tourism will disturb the bio diversity because of the following reasons</p> <p>When a large population is concentrated over a small area it will have the effect of</p> <ol style="list-style-type: none"> <li>decrease of clean water</li> <li>decrease of the number of forest/deforestation to make a new house or had been converted into farmlands</li> <li>Increase of waste on the environment. It's condition make a unhealthy sanitation</li> <li>Increase of infectious disease. So the people get sick easily</li> <li>Due to increase in population, greezone becomes smaller and smaller because of the construction of various facilities such as buildings, roads etc . Thereby only small amount of water can be absorbed into the soil.</li> </ol> </li> <li> <p>The decision to ban tourism completely from this state is not correct. It will affect the lively hood of local people who earn their bread and butter. State's revenue also gets affected due to this , Instead the following measures can be taken up</p> <ol style="list-style-type: none"> <li>Instead of allowing a big group, people in small chunks can be allowed to visit.</li> <li>Strict rules are to be enforced on the pilgrims and tourists in the disposing the Waste materials for promoting the healthy environment</li> <li>The tourists as well as local people should be properly trained to face any natural disaster without disturbing the nature.</li> <li>All hilly roads must have adequate drainage systems to fight with natural calamities</li> <li>There has to be a mandatory environmental impact assessment for the construction of all state and national high ways and broadening of roads</li> </ol> </li> </ol>

2	What are the tourism related activities that affect the environment at a place?
	<ul style="list-style-type: none"> <li>a. Construction of new roads and bridges and broadening of the ones that already exist.</li> <li>b. Building many hotels and guest houses to accommodate tourists</li> <li>c. Building huge power projects to meet the growing demands of energy of the expanding state</li> <li>d. Dumping of huge quantities of organic and in-organic waste.</li> <li>e. Deforestation for growing demands of space</li> </ul> <p>Heavy traffic that pollute air and water, on fragile regions</p>
3	'The horrific disaster that struck Uttarakhand has been assessed as a mix of natural and manmade reasons.' Justify the statement
	<p>A heavy rainfall, cloudbursts and landslides were the natural causes of Uttarakhand disaster. In addition to the nature man also is equally responsible for this disaster.</p> <ul style="list-style-type: none"> <li>1. Riverbed Mining is done in an area of 1.608 hac.</li> <li>2. .About 15,072 ha of forests have been cleared.. The region is prone to landslides.</li> <li>3. There are 244 Hydel projects constructed to satisfy the energy needs. This resulted in evacuation of many people. Also People lost their livelihood. There are reports to say that large part of power generated is lost during transmission .</li> <li>4. There are no readiness programmes to face the calamities.</li> <li>5. Improper building constructions.</li> <li>6. Improper agricultural practices on barren hill slopes,</li> <li>7. Unscientific road building and</li> <li>8. The extraction of building stones from open ground. . A report commissioned by the Union Environment warned the centre against going ahead with 24 hydel projects planned on the Alakananda and Bhagirathi river systems which will destroy the 22 percent of the state's forest land and eco system.</li> <li>9. There is a 1000 per cent increase in vehicular traffic in the last eight years which resulted in the higher increase of landslides. More number of people allowed for tourism during the monsoon season. There are no rain fall measuring devices set up at Kedarnath and Badrinath to know how much rain fell and find out the causes.</li> </ul>

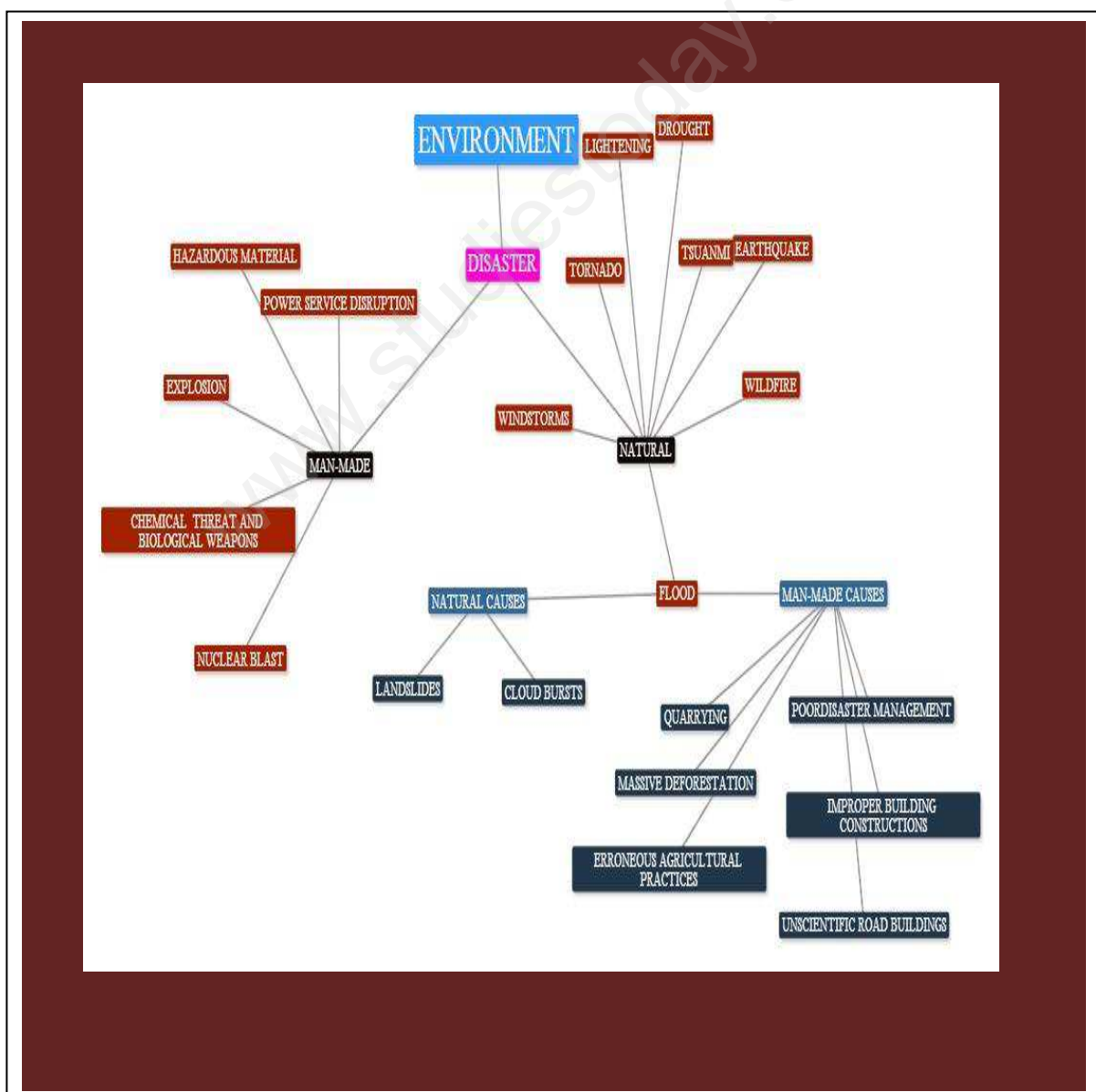
4	What are the advantages of constructing Dams
	<ol style="list-style-type: none"> <li>1. Clean, efficient, and reliable form of energy.</li> <li>2. Does not emit any direct pollutants or greenhouse gases.</li> <li>3. While the initial cost is high, they are very inexpensive to operate.</li> <li>4. Electricity generated by hydro-electric power plants is the cheapest electricity generated.</li> <li>5. Dams prevent floods.</li> <li>6. Dams store water for irrigation in summer seasons and dry months. Many desert areas can now farm due to dams and canals that supply water.</li> <li>7. Dams supply water for local drinking needs.</li> <li>8. Allows for fish farming.</li> </ol>
5	What is the negative impact of constructing HYDEL POWER PROJECTS?
	<ol style="list-style-type: none"> <li>1. In flat basins large dams cause flooding of large tracts of land, destroying local animals and habitats.</li> <li>2. People have to be displaced causing change in life style and customs, even causing emotional scarring. About 40 to 80 million people have been displaced physically by dams worldwide.</li> <li>3. Large amounts of plant life are submerged and decay anaerobically (in the absence of oxygen) generating greenhouse gases like methane. It is estimated that a hydroelectric power plant produces 3.5 times the amount of greenhouse gases as a thermal power plant burning fossil fuels.</li> <li>4. The migratory pattern of river animals like salmon and trout are affected.</li> <li>5. Dams restrict sediments that are responsible for the fertile lands downstream. Farmers use chemical fertilizers and pesticides to compensate for the loss in productivity.</li> <li>6. Salt water intrusion into the deltas means that the saline water cannot be used for irrigation.</li> <li>7. Large dams are breeding grounds for mosquitoes and cause the spread of disease.</li> <li>8. Farmers downstream who used to wait for the flooding of the fields to plant their seeds are affected.</li> <li>9. Dams serve as a heat sink, and the water is hotter than the normal river water. This warm water when released into the river downstream can affect animal life.</li> <li>10. Peak power operations can change the water level thirty to forty feet in one day and can kill the animals staying at the shorelines.</li> </ol> <p>Around 400,000 km<sup>2</sup> of land worldwide has been submerged due to the construction of dams.</p>



1	State whether the following statements are True or False.
	a. Every community must get to know its own features and surroundings: the natural environment as well as environment built by human beings.
	b. The number of Hydel Projects constructed in Uttarakhand is 244 and 1500 ha of forest was diverted.
	c. The highest rainfall in June for the state of Uttarakhand being 350.5 mm.
	d. The river Sabri is the Tributary of Ganga.
2	Fill in the blanks :
	a. Number of Hydel projects that were constructed in Uttarakhand till 2012 are _____.
	b. _____ and _____ rivers are the tributaries of Ganga.
	c. The average monthly rainfall in Uttarakhand in the months of July and August is more than _____ mm.
	d. Uttarakhand disaster occurred on ____ and _____ of June, 2013.
	e. 'What else does one expect from the mountain if there is heavy tourist rush at vulnerable areas. The Himalaya is a young mountain and you dynamite it to build roads. Landslides are bound to happen,' says a senior officer of _____ Meteorological Centre.

## 2. Theme- Environment and Development- Lessons from the Hills

### CONCEPT MAP-1



CONCEPT MAP-2

